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STATE SAFETY REGULATION OF MOTORCYCLE AND ATV RENTAL SERVICES

Summary. *The article examines the current regulatory framework governing business entities providing motorcycle and all-terrain vehicle (ATV) rental services. Based on an analysis of Ukrainian legislation, the international experience of the United States, the European Union, and Australia, as well as recent studies on injury prevention, the main gaps in the legal framework for ensuring user safety are identified.*

The study substantiates the need for introducing a risk-based approach to the state regulation of rental operators. A state regulation model and the concept of a Minimum Safety Standard for Rental Operators are developed, including requirements for vehicle technical inspections, user training, the use of personal protective equipment (PPE), incident reporting, and insurance.

The practical significance of the study lies in the application of the proposed model to improve the legal framework governing safety in motorcycle and ATV rental services.

The research is based on comparative legal analysis, systems analysis, generalization, and the analysis of international experience.

Key words: *state regulation, safety, all-terrain vehicles (ATVs), motorcycles, vehicle rental services, risk management, public administration.*

Problem Statement. In recent years, Ukraine has experienced steady growth in the popularity of active tourism and recreational services involving motorcycles and all-terrain vehicles (ATVs). At the same time, the number of business entities providing rental services for such vehicles has increased, particularly in tourist regions. Despite the development of this market segment, the issue of ensuring user safety remains insufficiently regulated.

Customers of rental operators often have limited riding experience, are unfamiliar with the specific features of a particular vehicle model, and operate such vehicles in off-road conditions for the first time. Therefore, the level of safety largely depends on the organization of the rental service.

The current legislation of Ukraine regulates the activities of rental operators only through the general provisions of civil, commercial, and tourism legislation [8–12]. At the same time, there are no specific regulatory requirements concerning vehicle technical inspections, safety briefings, the mandatory use of personal protective equipment (PPE), user insurance, staff qualifications, or incident reporting.

In the absence of specific regulatory requirements, the level of safety is determined by the internal standards of individual rental operators, which substantiates the need for state regulation.

The object of the study is the activity of business entities providing motorcycle and ATV rental services, while the subject of the study is the mechanisms of state regulation of the safety of such activities.

Literature Review. The safe operation of motorcycles and all-terrain vehicles (ATVs) has been widely studied in international scientific literature. Most studies focus on the causes of accidents and injury prevention.

According to the U.S. Consumer Product Safety Commission (CPSC) and the American Academy of Pediatrics, approximately 100,000 ATV-related injuries are reported annually in the United States, while the number of fatalities is about 700–800 per year [1, 2]. The main causes of severe injuries include vehicle rollovers, loss of control, excessive speed, and the operation of vehicles by inexperienced riders.

A systematic review by Rattan R., Joseph B., et al. found that the severity of injuries is primarily associated with the absence of personal protective equipment (PPE), insufficient riding experience, and non-compliance with operating rules [4]. Similar conclusions are reported by the American Academy of Pediatrics, which recommends the mandatory use of certified motorcycle helmets and rider training as the most effective measures for injury prevention [3].

Issues related to state regulation of safety are also addressed in publications by Safe Work Australia and the Australian Competition and Consumer Commission, which substantiate the need for a comprehensive approach combining technical requirements for vehicles, user training, risk management, and government supervision [5, 6]. In the countries of the European Union, similar principles are implemented through legislation on general product safety and consumer protection [7].

At the same time, the analysis of published studies indicates that the state regulation of motorcycle and ATV rental services remains insufficiently investigated. The lack of comprehensive studies devoted to risk management in this field determines the relevance of the present research.

Main Body

Regulatory Framework for Motorcycle and ATV Rental Operators: International Experience

The experience of countries where the motorcycle and ATV rental market developed much earlier shows that reducing injury rates is achieved primarily through the establishment of minimum requirements for the organization of rental operators by the state. These requirements regulate the technical condition of vehicles, user training procedures, the use of personal protective equipment (PPE), risk insurance, and state supervision of compliance with established regulations.

In Ukraine, the activities of rental operators are regulated only by the general provisions of the Civil Code of Ukraine, the Commercial Code of Ukraine, and the Laws of Ukraine *On Tourism*, *On Consumer Protection*, and *On Road Traffic* [8–12]. At the same time, the legislation does not establish specific requirements for the activities of business entities providing motorcycle and ATV rental services. In particular, there are no legally defined requirements regarding vehicle technical inspections, safety briefings, the provision of personal protective equipment, staff qualifications, risk insurance, or incident record-keeping.

In most U.S. states, the safe operation of ATVs is regulated by specific legal acts establishing age restrictions, mandatory helmet use, rider training for certain categories of users, and government injury prevention programs [1; 2]. In Australia, following a comprehensive analysis of the causes of fatal accidents, mandatory requirements for the design of new ATVs were introduced, requirements for the use of personal protective equipment were strengthened, and government risk management programs were implemented [5; 6]. In the countries of the European Union, there is no specific legislation governing rental operators; however, the required level of safety is ensured through legislation on product safety, consumer protection, and the civil liability of operators [7].

Unlike most developed countries, Ukraine has no specific minimum requirements governing the activities of motorcycle and ATV rental operators (Table 1).

Table 1

Comparative Characteristics of State Regulation of Motorcycle and ATV Rental Operators

Criterion	United States	European Union	Australia	Ukraine
Minimum safety requirements	✓	✓	✓	±
Technical inspections	✓	✓	✓	±
Personal protective equipment	✓	✓	✓	—
User training / safety briefing	±	✓	✓	—
Insurance requirements	±	✓	✓	—
Specific requirements for rental operators	±	±	✓	—
Injury prevention programs	✓	✓	✓	—

Note: ✓ – regulated; ± – partially regulated; — – no specific regulatory requirements.

Source: compiled by the author based on sources [1–12]

Risk Factor Analysis and a Risk-Based Model of State Regulation

Statistical data published by international organizations confirm that the operation of all-terrain vehicles (ATVs) is associated with a high level of risk. According to the U.S. Consumer Product Safety Commission (CPSC), approximately 100,000 ATV-related injuries and about 700–800 fatalities are reported annually in the United States [1; 2]. The main causes of severe injuries remain vehicle rollovers, excessive speed, loss of control, operation of vehicles without adequate training, and failure to use personal protective equipment (PPE) [3; 4].

Most studies focus on user behavior or the technical characteristics of vehicles, whereas organizational safety factors remain insufficiently investigated.

Based on the analysis of international experience, risk factors can be divided into four groups (Table 2).

Table 2

Main Risk Factors in Motorcycle and ATV Rental Services

Category	Primary Risk Factors	Risk Mitigation Measures
Technical	Vehicle defects and mechanical failures	Pre-rental inspection, scheduled maintenance
Human factors	Insufficient riding experience, unsafe behavior, excessive speed	Safety briefing, rider competency assessment, route selection
Organizational	Lack of supervision, communication, and emergency procedures	Standardized operating procedures for rental services
Environmental	Adverse weather conditions, difficult terrain, natural obstacles	Route planning and continuous monitoring of operating conditions

Source: developed by the author based on sources [1–6]

In Ukraine, no official state records of incidents related to motorcycle and ATV rental services are maintained, making it difficult to assess the effectiveness of existing safety measures [8–12].

For this reason, the author proposes a risk-based model of state regulation aimed at preventing hazardous events through risk management before, during, and after the provision of rental services.

The practical implementation of the proposed model involves the development of a **Minimum Safety Standard for Rental Operators**, establishing uniform mandatory requirements for all market operators regardless of their ownership structure (Table 3).

Table 3

Structure of the Minimum Safety Standard for Motorcycle and ATV Rental Operators

Component	Key Measures
Technical inspection	Pre-rental inspection and scheduled vehicle maintenance
User training	Mandatory safety briefing and rider competency assessment
Personal protective equipment	Provision of certified protective equipment

Component	Key Measures
Operational safety	Safe route planning, guided supervision, and communication systems
Documentation and insurance	Maintenance records, incident reporting, and insurance coverage

Source: developed by the author

The proposed approach makes it possible to move from monitoring individual requirements to assessing the effectiveness of the safety system as a whole and provides a basis for the development of unified state standards governing the activities of rental operators.

Practical Implementation of the Proposed Model

The proposed model may be used as a conceptual basis for the development of a specific regulatory act or for introducing amendments to the current legislation of Ukraine governing the activities of business entities providing motorcycle and all-terrain vehicle (ATV) rental services.

Unlike the current approach, which provides only general regulation of business activities, the proposed model establishes uniform minimum requirements for the safe organization of rental services regardless of the size of the operator. Its implementation will make it possible to standardize vehicle technical inspections, safety briefings, the use of personal protective equipment (PPE), incident reporting, and risk insurance.

An important element of state regulation should be the establishment of a centralized system for recording accidents and incidents related to motorcycle and ATV rental services. The collection of statistical data will make it possible to assess the effectiveness of regulatory requirements, identify the main risk factors, and improve state policy in the field of safety in a timely manner.

Conclusions. The study has shown that the current legislation of Ukraine does not contain specific legal regulation governing motorcycle and all-terrain vehicle (ATV) rental services, which does not ensure adequate risk management or a uniform level of user safety.

The analysis of international experience in the United States, the European Union, and Australia confirmed that the most effective approach is a risk-based model combining technical, organizational, informational, and insurance mechanisms of state regulation.

This study proposes, for the first time, a risk-based model of state regulation for business entities providing motorcycle and ATV rental services. The proposed model integrates technical, organizational, and insurance risk management mechanisms into a unified system of minimum requirements.

The proposed model may be used as a theoretical basis for the development of regulatory acts, industry standards, and methodological guidelines in the field of the safe operation of high-risk vehicles.

Prospects for further research include the development of a methodology for evaluating the effectiveness of the proposed model and mechanisms for its practical implementation.

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